

*HELIOTHIS* OCHSENHEIMER, 1816 (INSECTA,  
LEPIDOPTERA): PROPOSAL TO DESIGNATE GENDER AND  
STEM. Z.N.(S.) 2306

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The object of this application is to ask the Commission to rule on the gender and the stem of the generic name *Heliothis* Ochsenheimer, 1816, a name widely used throughout the world for agricultural pests of major economic importance, and as the type genus of a well known subfamily of the NOCTUIDAE.

2. *Heliothis* was used first by Hübner, [1806] (*Tentamen determinationis digestionis* . . . :[2]), in a work that has been rejected for nomenclatural purposes in 1926, Opinion 97, and in 1954, Opinion 278. The only species included by Hübner was *Phalaena dipsacea* Linnaeus, 1767, and *Heliothis* was treated as feminine.

3. *Heliothis* was next used by Hübner, 1808 (*Erste Beiträge Samml. exot. Schmett.*: 5), in a work that has also been rejected for nomenclatural purposes in 1966, Opinion 789. The only name then included by Hübner was of a new species *Heliothis jucunda*, at that time a *nomen nudum* which nevertheless shows that *Heliothis* was again treated as feminine.

4. *Heliothis* was next used, and on this occasion established, by Ochsenheimer, 1816 (*Schmett. Eur.*, vol. 4: 91), and again treated as feminine. The type species *Phalaena dipsacea* Linnaeus, 1767 (*Syst. Nat.*, (Edn 12) vol. 1: 856), was subsequently designated by Samouelle, 1819 (*Entomologist's useful Compendium*: 252). Treitschke, 1826 (in Ochsenheimer, *Schmett. Eur.*, vol. 5 (3): 215), gave the Greek derivation of *Heliothis* and continued to treat it as feminine.

5. Meigen, 1832 (*Syst. Beschreibung eur. Schmett.*, vol. 3: 224), emended the generic name to *Heliothisa*, thus emphasizing the feminine gender.

6. Up to the present time about 35 new taxa with available names have been established in the genus *Heliothis* and of these 20 of the adjectival species-group names published by 14 different authors were treated as feminine, 5 adjectival names by 3 different authors were treated as masculine, and the remainder as nouns.

7. Ever since the classic checklist by Staudinger, 1901 (in Staudinger & Rebel, *Cat. Lepid. palaearct. Faunengeb.* pt.1), the generic name *Heliothis* has been treated as feminine throughout the Old World, and similarly since McDunnough, 1938 (*Check List*

*Lepid. Canada and U.S.A.*), this name has been treated as feminine by New World authors.

8. Hardwick, 1965 (The Corn Earworm complex, *Mem. ent. Soc. Can.*, No. 40), established *Helicoverpa* for the type species *Noctua armigera* Hübner, [1808], one of the most important pests of cotton, maize (corn), tobacco, tomatoes and other crops in the Old World. Sixteen other species were also placed in *Helicoverpa* including *Phalaena zea* Boddie, 1850, one of the most destructive insect pests in the U.S.A., attacking the same crops as *armigera*; *Heliothis punctigera* Wallengren, 1860, a major pest in Australia; and other pest species such as *Heliothis assulta* Guenée, 1852, and *Noctua virescens* Fabricius, 1777.

9. Boursin, 1965 (*Bull. mens. Soc. linn. Lyon*, vol. 34: 186), synonymized *Helicoverpa* with *Chloridea* Duncan [& Westwood], 1841, nowadays treated as a junior subjective synonym of *Heliothis*.

10. Hardwick, 1970 (A generic revision of the North American Heliiothidinae, *Mem. ent. Soc. Can.* No. 73: 18), reiterated his opinion that *Helicoverpa* and *Heliothis* were generically distinct and continued to treat both as feminine.

11. Steyskal, 1971 (On the grammar of the name *Heliothis* Ochseneimer, *J. Lepid. Soc.*, vol. 25: 265), pointed out that under the Code, Article 30(a)i, the gender of *Heliothis* was masculine and would require a ruling by the Commission to fix it as feminine. In an Editor's Note at the end of Mr. Steyskal's paper it was suggested that the case should be submitted to the Commission for a ruling. I have not done this up to now as I did not anticipate that anyone would wish to upset the traditional feminine treatment of this generic name.

12. Todd, 1978 (A Checklist of Species of *Heliothis* Ochseneimer, *Proc. ent. Soc. Wash.*, vol. 80: 2) stated that he was treating *Helicoverpa* as a synonym of *Heliothis* and that 'The generic name, *Heliothis*, is masculine in gender, but has usually been treated as feminine.' He then gave a checklist of valid names and synonyms in which the terminations of 33 valid names were changed to masculine. Dr Todd is fortunate in that he could treat *zea* Boddie, commonly known as the New World Corn Earworm or Cotton Bollworm, as a noun and so did not have to change the name of this major pest in North America. Of the other species in the U.S.A. placed in *Heliothis*, if this name is treated as masculine then the termination of three should be changed, but if treated as feminine then all could remain the same. The other 30 taxa the terminations of whose names Dr Todd has changed occur outside the U.S.A. and unfortunately include all the major pests in this group such as *armigera* Hübner, *punctigera* Wallengren, *assulta* Guenée,

and other well known species such as *viriplaca* Hufnagel, *maritima* Graslín, *peltigera* [Denis & Schiffermüller], and *nubigera* Herrich-Schäffer. No taxonomist in the Old World would with impunity dare to suggest any such unnecessary change in spelling of these names which have had total stability and universality of use for so long.

13. In the *Review of Applied Entomology* (Agricultural Series) vol. 64 containing abstracts of works published during 1976, *H. armigera* was used in 74 different works, during 1977 it was used in 58 works, and during 1978 in 64 works. There are nomenclatural problems enough for field workers to contend with as the specific names oscillate between *Heliothis* and *Helicoverpa*, but now for some nomenclaturists to say that these generic names have different genders and therefore that the terminations of hitherto stable specific names must be changed, is evidence that in some respects zoological nomenclature is out of touch with the real world of practical agriculture and computer-based information retrieval.

14. Under the Code, Article 30(a)i, the Commission can rule on the gender of a genus-group name without the use of the plenary powers. I therefore ask for *Heliothis* to be designated as feminine in conformity with tradition and usage.

15. Boisduval, 1828 (*Europaeorum Lepidopterorum Index Methodicus*: 94), first used the name HELIOTHIDI for a tribe containing *Heliothis*. Since then and up to the present day it has been used as a family-group name based either on HELIOTH- or HELIOTHID-.

16. Steyskal, 1971: 264, pointed out that the name *Heliothis* is an aorist passive participle of the Greek verb *hēlioō* and strict application of the Code, Article 29a, would require the use of the stem HELIOTHENT- in forming family-group names. This has never been followed.

17. Steyskal continued 'However, if Article 11.b of the Rules, which states that zoological names "must be either Latin or Latinized," be interpreted strictly, we may consider that the complex Greek participial system was not a part of Latin, except in the case of a few words used as nouns and to be found in Latin dictionaries. We may then consider *Heliothis* as declinable in the way the great majority of Latin nouns in *-is* are declined, . . .

'If this is done, the stem used in forming family-group names will be *Helioth-* and the subfamily name consequently *Heliothinae*. At any rate, there can be no basis for the insertion of *-id-*.'

18. The Code, Article 29d, states that 'A family-group name proposed before 1961 based upon an incorrectly formed stem is not to be amended for that reason if it is in general use'. The stem

HELIOTH- is certainly in general, though not in universal, use. In any case it is customary in the Lepidoptera to avoid the clumsy -ididae termination, for example *Pyralis*, family PYRALIDAE (Opinion 450); *Episema*, family EPISEMIDAE (Opinion 494); and *Pieris*, family PIERIDAE (Opinion 500). An application to the Commission by Steyskal, 1972 (*Bull. zool. Nom.*, vol. 29: 27), to have the names PYRALIDAE and EPISEMIDAE changed to PYRALIDIDAE and EPISEMATIDAE was refused in Opinion 1094.

19. The International Commission on Zoological Nomenclature is therefore requested:

- (1) to rule that the stem of the generic name *Heliothis* Ochsenheimer, 1816, is HELIOTH-;
- (2) to rule that the gender of the generic name *Heliothis* Ochsenheimer, 1816, is feminine;
- (3) to place on the Official List of Family-group Names in Zoology:
  - (a) HELIOTHINAE (ex *Heliothidi*) Boisduval, 1828, type genus *Heliothis* Ochsenheimer, 1816;
- (4) to place on the Official List of Generic Names in Zoology:
  - (a) *Heliothis* Ochsenheimer, 1816 (gender: feminine), type species by subsequent designation by Samouelle, 1819, *Phalaena dipsacea* Linnaeus, 1767;
- (5) to place on the Official List of Specific Names in Zoology:
  - (a) *dipsacea* Linnaeus, 1767, as published in the binomen *Phalaena dipsacea* (specific name of the type species of *Heliothis* Ochsenheimer, 1816).

20. This application is strongly supported by those of my colleagues who are involved with the usage of *Heliothis* including J.D. Bradley, D.S. Fletcher, K.M. Harris and J.D. Holloway.

## NOTE ON THE ABOVE APPLICATION Z.N.(S.) 2306

By the Secretary, International Commission on  
Zoological Nomenclature

I should like to suggest a more plausible etymology for the generic name *Heliothis* Ochsenheimer, 1816 than that put forward by Mr Steyskal. The Greek verb "helioomai" seems to be known only in the passive voice and to mean "to be exposed to the sun". On the other hand, we are dealing with the name of a Noctuid moth, which would be most unlikely to be exposed to the sun. The Ionian Greeks used the noun "Heliotis" as a feminine form of "helios" (the sun) for the moon, and it seems to me more likely that either Ochsenheimer, his copyist, or his printer made a small error in latinising a highly appropriate Greek word (not involving any change of pronunciation in German) than that any of them discovered and deliberately used an obscure and highly inappropriate word. *Heliotis* as a generic name (also in Lepidoptera) was used by Lefebvre, 1827, and is not a junior homonym of *Heliothis* Ochsenheimer, 1816.

In the *Index Animalium*, Sherborn lists not fewer than 10 specific epithets in the feminine proposed before 1850 for species of *Heliothis*.

This suggestion entails no obvious change in the proposals put forward by Dr Nye, but it does question the correctness of the view that the gender of the generic name *Heliothis* is masculine under the Code.

The irrelevant fact may be added that at Carrae in ancient Italy the sun was worshipped as Lunus, the masculine of Luna.